APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,756	08/07/2000	Sharon Duvdevani	U 012894-7	3691

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EXAMINER
CARTER, AARON W

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _11 May 2006_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-8 and 34-38_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _34-38_ is/are allowed.

6)☐ Claim(s) _1-4 and 7_ is/are rejected.

7)☐ Claim(s) _5,6 and 8_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _07 August 2000_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

JINGGE WU
PRIMARY EXAMINER

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on May 11, 2006 has been entered.

Response to Arguments

2.   Applicant's arguments filed May 11, 2006 have been fully considered but they are not

persuasive.

Applicants argue that the prior art of Tokita, already of record, does not teach or fairly

suggest the limitation of "representation of boundaries comprising reference vectors extending

along said boundaries". Further stating "Tokita's gradient arrows would normally be transverse

to or even perpendicular to the boundary, as distinguished from the reference vectors of the

claimed invention, which extend along the boundary."

The Examiner respectfully disagrees. Wherein the broadest reasonable interpretation of

the claims limitation of "extending along the boundaries", the prior art of Tokita discloses

vectors extending along said boundaries in the (y) direction, as seen in figures 2 and 4. Take for

instance figure 4, as an example, it can be said that the entire line of (6, yj) is a boundary

between (5, yj) and (7, yj), wherein vectors extend along the boundary, from (6,2) to (6,8).

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 1, 3, 4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN

4,958,374 to Tokita et al. ("Tokita").

As to claim 1, Tokita discloses a method for inspecting objects, the method comprising:

Creating a reference image for a representative object, said reference image comprising

an at least partially vectorized first representation of boundaries representing said representative

object (column 4, lines 11-15 and lines 42-53 and Fig. 4, wherein the map of gradient vectors for

the reference pattern data corresponds to the reference image and vectors B corresponds to the

first representation of boundaries), said at least partially vectorized first representation of

boundaries comprising reference vectors extending along said boundaries (Fig. 2 - 4, wherein the

broadest reasonable interpretation of the claims limitation of "extending along the boundaries",

the prior art of Tokita discloses vectors extending along said boundaries in the (yj) direction, as

seen in figures 2 and 4);

Acquiring an image of an object under inspection comprising a second representation of

boundaries representing said object under inspection (column 3, line 66 – column 4, line 11,

column 4, lines 22-33 and figure 2, wherein vectors A corresponds to the second representation

of boundaries); and

Comparing a location of at least some boundaries in the second representation of

boundaries to a location of corresponding boundaries in said at least partially vectorized first

representation of boundaries (column 4, lines 55-64), thereby to identify defects (column 5, lines

9-15).

As to claim 3, Tokita discloses a system for image processing comprising:

A boundary identifier operative to generate a representation of boundaries of known

elements in an image (column 3, line 66 – column 4, line 11, column 4, lines 22-33, Fig. 2 and

Fig 17, wherein high gradient areas represented in gradient vectors A and B would indicate the

boundaries between different valued pattern data), said representation of boundaries comprising

reference vectors extending along said boundaries (Fig. 2 - 4, wherein the broadest reasonable

interpretation of the claims limitation of "extending along the boundaries", the prior art of Tokita

discloses vectors extending along said boundaries in the (yj) direction, as seen in figures 2 and

4);

A hardware candidate defect identifier operative to identify at least some candidate

defects in the image, in hardware (column 4, lines 55-64 and Fig. 17, element 9 and 10); and

A software candidate defect inspector receiving an output from the hardware candidate

defect identifier and analyzing a location of boundaries in said representation of boundaries to

identify at least one false alarm within said output, in software (column 4, line 64 – column 5, line 15 and Fig. 17, element 21).

As to claim 4, Tokita discloses a system according to claim 3, wherein the boundary identifier comprises a hardware boundary operative to generate a representation of boundaries of known elements in the image, in hardware (column 3, line 66 – column 4, line 11, column 4, lines 22-33, Fig 2 and Fig. 17).

As to claim 7, Tokita discloses a system according to claim 3, wherein said hardware candidate defect identifier employs said representation of boundaries in order to identify at least some candidate defects (column 4, lines 55-64 and Fig. 17).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tokita.

As to claim 2, Tokita discloses a method according to claim 1, wherein the comparing employs a variable threshold for acceptable distance between corresponding portions of the

boundaries in the first and second representations (column 5, lines 7-15 and column 7, line 67 –

column 8, line 8).

Tokita does not disclose expressly wherein the variable threshold is user-selected.

At the time of the invention, it would have been obvious to a person of ordinary skill in

the art to have the user select the threshold. Applicant has not disclosed that having the user

select the threshold, as opposed to the system automatically selecting it, provides an advantage,

is used for a particular purpose or solves a stated problem. One of ordinary skill in the art,

furthermore would have expected Applicant's invention to perform equally well with the system

selecting the threshold because selecting the threshold is based solely on the minimum value of

gradient vector differences.

Therefore, it would have been obvious to one of ordinary skill in the art to modify the

invention of Tokita with a variable threshold that is user-selected to obtain the invention as

specified in claim 2.

Allowable Subject Matter

7.   Claims 34-38 are allowed, as indicated in the office action mailed on February 16, 2006.

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

USPN 4,532,650 to Wihl et al. discloses comparing vectorized representations of patterns

to detect defects.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Aaron W. Carter whose telephone number is (571) 272-7445.

The examiner can normally be reached on 8am - 4:30 am (Mon. - Fri.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

awc

JINGGE WU
PRIMARY EXAMINER